



UNITED STATES DEPARTMENT OF COMMERCE

United States Patent and Trademark Office

Address: COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
-----------------	-------------	----------------------	---------------------

09/467,986 12/21/99 NAKAZAWA

A 35.C14120

EXAMINER

005514 IM52/0411
FITZPATRICK CELLA HARPER & SCINTO
30 ROCKEFELLER PLAZA
NEW YORK NY 10112

FERGUSON, J

ART UNIT

PAPER NUMBER

1774

DATE MAILED:

04/11/01

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trad marks

Office Action Summary

Application No.

09/467,986

Applicant(s)

NAKAZAWA.ET AL.

Examiner

Lawrence Ferguson

Art Unit

1774

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 December 1999.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-30 is/are pending in the application.
- 4a) Of the above claim(s) 14-29 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-13 and 30 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claims _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are objected to by the Examiner.
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

- 15) ☒ Notice of References Cited (PTO-892)
- 16) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 17) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 6.
- 18) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 19) ☐ Notice of Informal Patent Application (PTO-152)
- 20) ☐ Other:

Art Unit: 1774

DETAILED ACTION

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:
 - I. Claims 1-13 and 30, drawn to endless belt, classified in class 428, subclass 220.
 - II. Claims 14-29, drawn to process of making endless belt, classified in class 360, subclass 126.
2. Inventions I and II are related as process of making and product made. The inventions are distinct if either or both of the following can be shown: (1) that the process as claimed can be used to make other and materially different product or (2) that the product as claimed can be made by another and materially different process (MPEP § 806.05(f)). In the instant case, the method can also be used to make a terminating belt without a diphenyl sulfone structure. Should applicant traverse on the ground that the species are not patentably distinct, applicant should submit evidence or identify such evidence now of record showing the species to be obvious variants or clearly admit on the record that this is the case. In this instance, if the examiner finds one of the inventions anticipated by the prior art, the evidence or admission may be used in a rejection under 35 U.S.C. 103(a) of the other invention.
3. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.
4. During a telephone conversation with Laura Bauer on March 27, 2001, an election was made with traverse to prosecute the invention of group I, claims 1-13 and 30. Affirmation of this election must be made by applicant in replying to this Office action. Claims 14-29, withdrawn

Art Unit: 1774

from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

5. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a petition under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

Claim Rejections – 35 USC 112

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

7. Claims 10-11 rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

a. In claims 10-11, the phrase “maximum value is within 100 times the minimum value thereof” is unclear.

Art Unit: 1774

Claim Rejections – 35 USC 103(a)

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 1-3, 9-13, and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Facci et al. (U.S. 5,079,121) in view of Mitsubishi (JP4255332).

10. Applicant claims an endless belt comprising a thermoplastic resin having a diphenyl sulfone structure.

11. Facci discloses that seamless belts are desirable as substrates for electrophotographic or ionographic imaging members (column 1, lines 57-60). Facci discloses a flexible, free standing polymeric seamless belt (column 5, lines 25-27). Facci discloses a seamless belt comprising a laminate of a conducting polymer and a host polymer, wherein at least one surface of the belt exhibits a resistivity of from about 10^2 to about 10^6 ohms per square (column 5, lines 66-98 and column 6, line 1). Facci discloses generating images which comprises incorporating into an ionographic imaging device (column 6, lines 35-37). Facci discloses a seamless cylindrical mandrel, which can be either solid or hollow (column 7, line 53), sleeve of small diameter (column 7, lines 58-59). Facci discloses extrusion, molding, blow molding, injection molding, casting and the like techniques (column 8, lines 24-26). Facci discloses a belt loop (column 8, line 36). Facci discloses a desirable thickness for the polymer layer when the formation of a

Art Unit: 1774

substrate for an electrophotographic or ionographic imaging member is intended are generally from about 200 Angstroms to about 1 micron, and preferably from about 1000 Angstroms to about 2000 Angstroms (column 9, lines 30-35). Facci discloses suitable host polymers include (column 11, line 18) 4,4'-dihydroxy-diphenyl-sulphone, and the like (column 11, lines 41-42). Facci discloses a thermoplastic film forming polymer particles in an organic liquid dispersion medium (column 11, lines 45-46). Facci discloses the host polymer having an electrical resistivity of at least about 10^5 ohm-cm (column 11, lines 58-60). Facci discloses seamless belts of the present invention are suitable for use as conductive substrates in electrophotographic imaging members. Additional layers may be added to the belts (column 12, lines 45-48) surface, which include a blocking layer, adhesive layer, photoconductive layer or a combination of these layers with or without additional layers (column 12 lines, lines 50-53). Facci discloses that the blocking layer may be applied with any suitable liquid carrier (column 12, lines 67-68). Facci discloses a charge transport layer (column 13, line 47). Facci discloses thermoplastic resins such as polysulfones (column 15, lines 55-58). Facci discloses the thickness of a solidified transport layer between about 5 to 100 microns (column 16, lines 4-5). Facci does not disclose a circular die. Facci does not disclose thickness in range applicant is claiming. The thickness claimed is of a conventional value and is considered an optimization of the method of making. It would have been obvious to one of ordinary skill in the art to make claimed invention because Facci teaches a seamless belt made of the same materials as applicant claims.

12. Mitsubishi teaches an endless belt material produced by melting polycarbonate resin containing carbon black as filler, extruding the melted resin from a circular die of an extruder.

Art Unit: 1774

13. Facci and Mitsubishi are analogous art because they are from the same field of continuous belts. At the time of the invention, it would have been obvious to one of ordinary skill in the art to use the circular die of an extruder of Mitsubishi with the seamless belt material of Facci because Mitsubishi teaches the conventional use of extruding melted resinous material in continuous belts.

Claim Rejections – 35 USC 103(a)

14. Claims 1-13 and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sypula et al. (U.S. 5,525,446) in view of Mitsubishi (JP4255332).

15. Applicant claims an endless belt comprising a thermoplastic resin having a diphenyl sulfone structure.

main fam
16. Sypula discloses an intermediate transfer member including a base layer and a top thermoplastic film forming polymer layer (abstract, lines 1-2). Sypula discloses it can be employed in an electrophotographic imaging device (abstract, line 7). Sypula discloses the intermediate transfer member of the present invention also comprises an adhesive layer between the thermoplastic film forming polymer layer and the base layer (column 2, lines 17-20). Sypula discloses the member can be in the form of an endless belt (column 2, lines 55-56). Sypula discloses polycarbonate resins employed as the bottom layer of the intermediate transfer member (column 2, lines 62-63) including 4,4'-dihydroxy-diphenyl-sulphone and the like (column 3, lines 14-15). Sypula discloses that the polycarbonate film layer can be extrusion molded then coated with an adhesive and a thermoplastic film forming polymer (column 3, lines 16-18).

Art Unit: 1774

Sypula discloses the polycarbonate film may be molten during application to a mandrel (column 3, lines 21-24). Sypula discloses a combination of both the liquid carrier and polycarbonate film (column 3, lines 35-36). Sypula discloses an extrusion process where a die tool is prepared from metal hardware with an extrusion slot that has the width and thickness dimensions of the film (column 4, lines 33-36). Sypula discloses the polycarbonate plastic compound is extruded through the die tool after being melted (column 4, lines 40-41). Sypula discloses transfer of toner images to the intermediate member (column 4, lines 51-52). Sypula discloses thermoplastic resins being used having a thickness range from about 0.5mils to about 3 mils (column 5, lines 37-40). Sypula discloses an extrusion die tool which has the desired opening width and gap corresponding to the width and thickness of the desired extruded film (column 5, lines 61-63). Sypula discloses a resistivity about 10^{10} ohm-cm (column 6, lines 21-22). Sypula discloses abrasion resistance (column 9, line 39). Sypula discloses a surface resistivity of the film base layer of intermediate transfer member is greater than 10^7 ohms/square (column 15, lines 8-10). Sypula discloses the intermediate transfer member has a dielectric thickness of about 200 μ m (column 16, line 5). Sypula does not disclose a circular die. Sypula does not disclose an external diameter. The diameter is of a conventional value. Determination of the diameter is considered optimization. It would have been obvious to one of ordinary skill in the art to make claimed invention because Sypula teaches a endless belt made of the same materials as applicant claims.

17. Mitsubishi teaches an endless belt material produced by melting polycarbonate resin containing carbon black as filler, extruding the melted resin from a circular die of an extruder.

Art Unit: 1774

18. Sypula and Mitsubishi are analogous art because they are from the same field of endless belts. At the time of the invention, it would have been obvious to one of ordinary skill in the art to use the circular die of an extruder of Mitsubishi with the intermediate transfer material of Sypula because Mitsubishi teaches the conventional use of extruding melted resinous material from a circular die to form endless belts.

19. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lawrence Ferguson whose telephone number is (703) 305- 9978. The examiner can normally be reached on Monday through Friday 8:30 AM – 4:30PM. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Cynthia Kelly can be reached on (703) 308-0449. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 305-5436 for regular communications and (703) 305-3599 for After Final communications. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0651.



Ldf
April 5, 2001

CYNTHIA HARRIS Kelly
PRIMARY EXAMINER
GROUP 1200- 1700

